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XCIV. *Monf. Faget's Remarks on the Ufe, &c. of the Styptic, purchafed by His Moft Chriftian Majefty; communicated by James Theobald, Efq; F. R. S.*

Read Dec. 7,
1752.

ABOUT the end of the year feventeen hundred and fifty, Mr. Broffard, a furgeon from Berry, came to Paris, to propofe the ufe of a remedy, which he had discover'd for ftopping the blood after amputations, and which he afferted to have found effectual in feveral amputations of the arms and legs. At his request, fome gentlemen of the Academy of furgery were deputed, in whole prefence he was to make fome new experiments in ftopping the blood upon different animals, and in all which he fucceeded, by ftopping it in the largeft arteries after amputation. But the fuccefs of this remedy might yet be confider'd a little dubious, becaufe in many animals, as in dogs particularly, the great arteries ftop of their own accord; and rarely any dog dies from an hæmorrhage, becaufe their blood is more difpofed to congeal, and by that means ftop the difcharge.

For this reafon the experiments made on animals not being thought fatisfactory, and yet being convinced, that no ill effect could follow the application of this remedy on human kind, Mr. Broffard was permitted to ufe it at the hofpital of the invalids, in an amputation of the leg, which fucceeded perfectly well; and not the leaft ill accident attended the cure thro' the whole time.

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Some time after this two waggons were run over by a waggon loaded with stone, and each of them had one leg broken in a miserable manner. These two men being brought to the Hospital of the Charity, I saw no other hopes of success but in amputating the legs; and, for that reason, I requested Mr. Broffard would be present, and give me a proof of this new application, which we applied in the following manner:

As soon as the leg was cut off, I slacken'd the tournequet, to discover the vessels; and Mr. Broffard applied, upon the orifices of the two arteries, two pieces of his astringent, fasten'd one upon the other with a riband, in the manner, which I have sent to you, and as it is in the drawing. After the application was made, I streighten'd the tournequet, and pass'd the two ends of the riband, which was fasten'd to the upper piece of the astringent, upon the stump over the knee, and applied a linen bag, filled slightly with the same astringent in powder, upon the whole wound; and, over all, applied the common dressings in the like case. After the dressing was finish'd, I slacken'd the tournequet, and two hours after took it intirely away. Eight-and-forty hours after this, we took off the dressings, and not the least drop of blood follow'd from the vessels: and we again applied one single piece of the astringent upon the two vessels; and I dress'd the other parts of the wound with pledgets of lint, with common digestive, a styrax plaster, and the usual bandage.

The third day the astringent fell off of itself in the time of dressing; and the patient, after that time, was

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dress'd

dress'd in the common manner. The same was done to the other patient, after the amputation, as to this.

The first of these men died on the fifth day, and the other on the ninth: but there did not appear, thro' the whole, the least tendency to an hæmorrhage. Thus the remedy fairly produced its effects, as to the stopping the blood.

However, in order to determine the manner, in which this astringent produces its effect, I examined the blood-vessels of those two patients after their death, and I found them contracted and straiten'd, as if they had been tied, and in the largest of them a conic coagulation of the blood, which was an inch and half long: and after having taken out this coagulation, it was with difficulty, that I could introduce the point of a very small probe into the orifice of that vessel.

The patient, who died on the ninth day, had the arteries contracted in the same manner; but with this difference, that the congelation was at least four inches long.

Mr. Morand has employed this remedy with success, in applying it to a wound, made by a sword, in the bending of the arm: and I myself have made use of it, with great success, on occasions, where the temporal and intercostal arteries have been open'd.

In the last-mention'd cases, I applied but one piece of the styptic upon the opening of the artery; and this generally falls off at the first dressing, that is, forty-eight hours after the application, without the least appearance of an hæmorrhage, or other ill symptoms, which can raise any objections to this styptic; for those patients are all recover'd,

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There have been lately made, at the hospital of the invalids, two experiments of this astringent in amputations ; and in both the success has been equal to all that can be desired. The surgeon, in these cases, used only the two pieces applied one upon the other, without using the powder in the bag, as before ; and dress'd the whole wound with lint, and the common bandage.

Thus, then, at last there appears to be discovered a remedy beyond our hopes, and which art has never yet equall'd. 'The application of fire was the cruel resource of the antients ; and Paré believed himself inspired, when he discovered the use of the ligature. But, alas ! how many accidents are there, which arise from the use of those two manners, and which too often terminate in the death of the patient ! Happy for us, that those accidents now appear to be no longer to be fear'd by the lucky discovery of this styptic, the first experiments of which have so greatly promised success !

It may be remarked, that, if this astringent succeeded only in coagulating the blood, it had produced nothing extraordinary ; for these coagulations would not have been sufficient to have stopp'd the hæmorrhage, directly after the operation in amputations : but its excellency lies in contracting the arteries so closely, that it hardly lets a little probe into the aperture of the artery, and by this means forms, as it were, a perfect ligature, much more certain than the usual one ; as this is not made in any one point of the cylinder of a vessel. Thus this application exceeds every thing, which has hitherto been produced by the operation of our hands.

This singularity in the operation of this remedy supposes another in the vessels, which is the great contractility of the fibres of the arteries. These, indeed, do naturally contract of themselves; but not to two thirds of their diameter; nor to that state, in which they are straiten'd by the effect of this astringent; because, by that, the whole aperture is almost intirely taken off in the largest vessels; and it is easy to imagine their effects in the smallest.

It may be observed, that it is not in the dead parts of bodies, that this contraction can be made: it requires the assistance of the vital principle, and operates on the fibres by certain articles contained in it, which dispose the animal body, by its irritation, to shorten its fibres, and reduce the tissue, which they compose, into a lesser volume.

This remedy, of which I have been speaking, is nothing else but the agaric of the oak. The best kind of it is found on the parts of oak-trees, where the large limbs have been cut off; and it very often resembles a horse-shoe in its shape. This agaric is distinguished into four parts; the rind; the second part, which is preferable to the other; the third part serves for the stopping the blood in the smaller vessels, as well as that part, which touches the tree. This last was what was powder'd, and applied in the little bag, as in the operations of the Charity.

The second part is what I make use of in amputations, which is cut into pieces, of the size of that which I have sent you. It must be beaten by a hammer till it is soft; and this is its whole preparation. Every part is prepared alike.

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The best time of collecting it Mr. Broffard has found to be in the autumn, in fine weather, after great heats.

This, then, Sir, is all I can collect of the use, application, and preparation of this new remedy for stopping blood. If the Royal Society shall find any thing in it worthy their regard, I shall think myself happy in having communicated these observations. I am

Your most obedient servant,

Faget.

XCV. A Letter of Benjamin Franklin, Esq; to Mr. Peter Collinson, F. R. S. concerning an electrical Kite.

Philadelphia, Oct. 1, 1752.

Read Dec. 21
1752.

AS frequent mention is made in the public papers from Europe of the success of the Philadelphia experiment for drawing the electric fire from clouds by means of pointed rods of iron erected on high buildings, &c. it may be agreeable to the curious to be informed, that the same experiment has succeeded in Philadelphia, tho' made in a different and more easy manner, which any one may try, as follows :

Make a small cross, of two light strips of cedar ; the arms so long, as to reach to the four corners of a large thin silk handkerchief, when extended : tie the corners of the handkerchief to the extremities of the cross ; so you have the body of a kite ; which
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